



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

February 2016

PAGE ____ OF ____

Data Qualified?
Yes / No

STORET Station Name: Holiday Springs above pump house Date: 08/01/2016
(mm/dd/yyyy)

STORET Station ID: G1CE0029 Latitude: 28.74062267
(Decimal Degrees)

WBID: 2838D RQ-2016-08-01-34 ORG ID: 21FLCEN Longitude: -81.8176127
(Decimal Degrees)

Receiving Body of Water: Lake Harris Field ID: G1CE0029 County: Lake

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection
Mike Lige								
Leif Roman								

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Equipment ID		

Collection Method		
☒ Wading	Via Boat	
☐ From Shore	☐ Canoe/Kayak	
☐ Other (note below)	☐ Electric Motor	
	☐ Gasoline Motor	

Water Level: Dry / Low / <u>Normal</u> / High / Flooded	Matrix: <u>Fresh</u> Marine / DI
Meter ID# <u>Betty / AB</u> Photos: Yes / <u>No</u>	Tide Falling: Yes / No / <u>NA</u>

Field Sample

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
<u>EST</u>	<u>11:40</u>	<u>0.15</u>	<u>0.3</u>	<u>2.1</u>	<u>25</u>	<u>7.8</u>	<u>0.14</u>	<u>0.36</u>	<u>301</u>	<u>23.8</u>
CEN										

Biological Samples Collected: None HA SCI LVS RPS LVI Other							
Parameter Suite	Parameter Methods		Preservation	Acid Lot#	Expiration	pH Check	
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP		☒ Ice ☒ H2SO4	<u>6168040</u>	<u>6/16/17</u>	☒ <2	
Metals	☐ W-ICPMS ☐ W-ICP		☐ Ice ☐ HNO3			☐ <2	
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter		☒ Ice				
Chlorophyll	☒ CHL-SUITE-W		☒ Ice				
BOD	☐ BOD-UNIN		☐ Ice				
Physical/Aggregate (Kit A/C)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS		☒ Ice				
Physical/Aggregate (Kit B/D)	☐ Alkalinity / W-F / W-TSS / TURBIDITY		☐ Ice				
Macroinvertebrates	☐ MI-PW-QLDC		☐ Formalin				
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR						
Periphyton	☐ ALGAE-ID						
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH						

Holiday Springs above pump house

Date: 08/01/2016
RQ-2016-08-01-34

G1CE0029
Field ID ↑
STORET ↓
G1CE0029

QA/QC Sample Information

Duplicate

Time Zone: <u>EST</u> CEN		Sample Depth (m): <u>0.15</u>		Field ID: <u>G1CE0029-DUP</u>	
Time: <u>11:44</u>		Total Depth (m): <u>0.3</u>			
Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H ₂ SO ₄	<u>6168040</u>	<u>6/16/17</u>	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	Place Preservative Sticker(s) Here (If Available)		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
BOD	☐ BOD-UNIN	☐ Ice			
Physical/Aggregate (Kit A/C)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Kit B/D)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	Holiday Springs above pump house Date: 08/01/2016 RQ-2016-08-01-34			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐				
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GI				

G1CE0029 DUP

Field ID ↑
STORET ↓

G1CE0029_DUP

Blank

Time Zone: <u>EST</u> CEN		Time: <u>11:52</u>		Field ID: <u>Field Blank</u>		Location: <u>G1CE0029 (truck)</u>	
☒ Field Blank ☐ Equipment Blank ☐ Field Cleaned Equipment Blank		Equipment ID					
Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check		
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H ₂ SO ₄	<u>6168040</u>	<u>6/16/17</u>	☒ <2		
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ <2		
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice	Place Preservative Sticker(s) Here (If Available)				
Chlorophyll	☒ CHLSUITE-W	☒ Ice					
BOD	☐ BOD-UNIN	☐ Ice					
Physical/Aggregate (Kit A/C)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice					
Physical/Aggregate (Kit B/D)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	Field Blank Date: 08/01/2016 RQ-2016-08-01-34					
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐						
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GI						

Field Blank

Field ID ↑
STORET ↓

Field Blank

Notes:

Signature: <u>LMD/8/23/16</u> (Initials/Date)		Date: <u>8/1/16</u>	
		Place Label Here (If Available)	

Field Parameters Entered into LIMS: LMD/8/23/16 (Initials/Date)

Date Migrated to STORET: _____ (Initials/Date)

Field Parameters QC in LIMS: _____ (Initials/Date)

Field Sheets Scanned/Saved: _____ (Initials/Date)

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID 76629 ORG ID 21 FL CEN LATITUDE 28.74062267
 COUNTY Lake STORET # 62CE0029 LONGITUDE -81.8176127
 DATE 8/1/16 TIME 1100 SAMPLING AGENCY FDEP CE-ROC
 SITE NAME Holiday Springs above pump house
 FIELD ID/NAME 62CE0029 RECEIVING BODY OF WATER Lake Harris

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>30</u> Silviculture <u>0</u> Field/Pasture <u>30</u> Agricultural <u>0</u> Residential <u>40</u> Commercial <u>0</u> Industry <u>0</u> Other (Specify) <u>0</u>							Landscape Development Intensity Index (LDI) <u>0</u>
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy				Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>3</u> m wide <u>8 sec</u>			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>1</u> Right Bank: <u>1</u>				Hydrologic Modification Score (per FT 3101) <u>0</u>			
High Water Mark: <u>0.5</u> + <u>0.2</u> = <u>0.7</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☒ Yes ☐ No			
Artificially ☐ No ☒ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☒ Heavily Shaded ☐ Lightly Shaded (11-45%) ☒ Moderate Shaded (46-80%)			

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify):		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐																																																																																	
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☐ RPS ☐ LVS ☐ LCI ☐ BioRecon			WATER QUALITY																																																																																		
<table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th>INVERT # Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr> <td>Woody Debris (Snags)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rock or Shell Rubble..</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sand.....</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mud / Muck / Silt</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)				Undercut Banks / Roots				Leaf Packs or Mat				Aquatic Vegetation				Rock or Shell Rubble..				Sand.....				Mud / Muck / Silt				Other				Other				<table border="1"> <thead> <tr> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top: <u>0.3</u></td> <td><u>23.8</u></td> <td><u>7.8</u></td> <td><u>2.1</u></td> <td><u>25</u></td> <td><u>301</u></td> <td><u>0.14</u></td> <td><u>0.3</u></td> </tr> <tr> <td>Mid: <u>0.15</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="7"> Meter ID: <u>Betty / AB</u> </td> <td> TOTAL DEPTH <u>0.3</u> </td> </tr> </tbody> </table>			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top: <u>0.3</u>	<u>23.8</u>	<u>7.8</u>	<u>2.1</u>	<u>25</u>	<u>301</u>	<u>0.14</u>	<u>0.3</u>	Mid: <u>0.15</u>							☒ VOB	Bottom								Meter ID: <u>Betty / AB</u>							TOTAL DEPTH <u>0.3</u>
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Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Stick ☐ Other ☐																																																																																		
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐																																																																																		
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐																																																																																		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☒ <u>spring run</u>																																																																																		
AMBIENT FIELD CONDITIONS / NOTES: <u>90's clear, Humid</u> <u>No LVS, <2m² veg</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																																																																					

SAMPLING TEAM

Mike Linger, Leif Roman

SIGNATURE:

[Signature]

DATE:

8/1/16

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

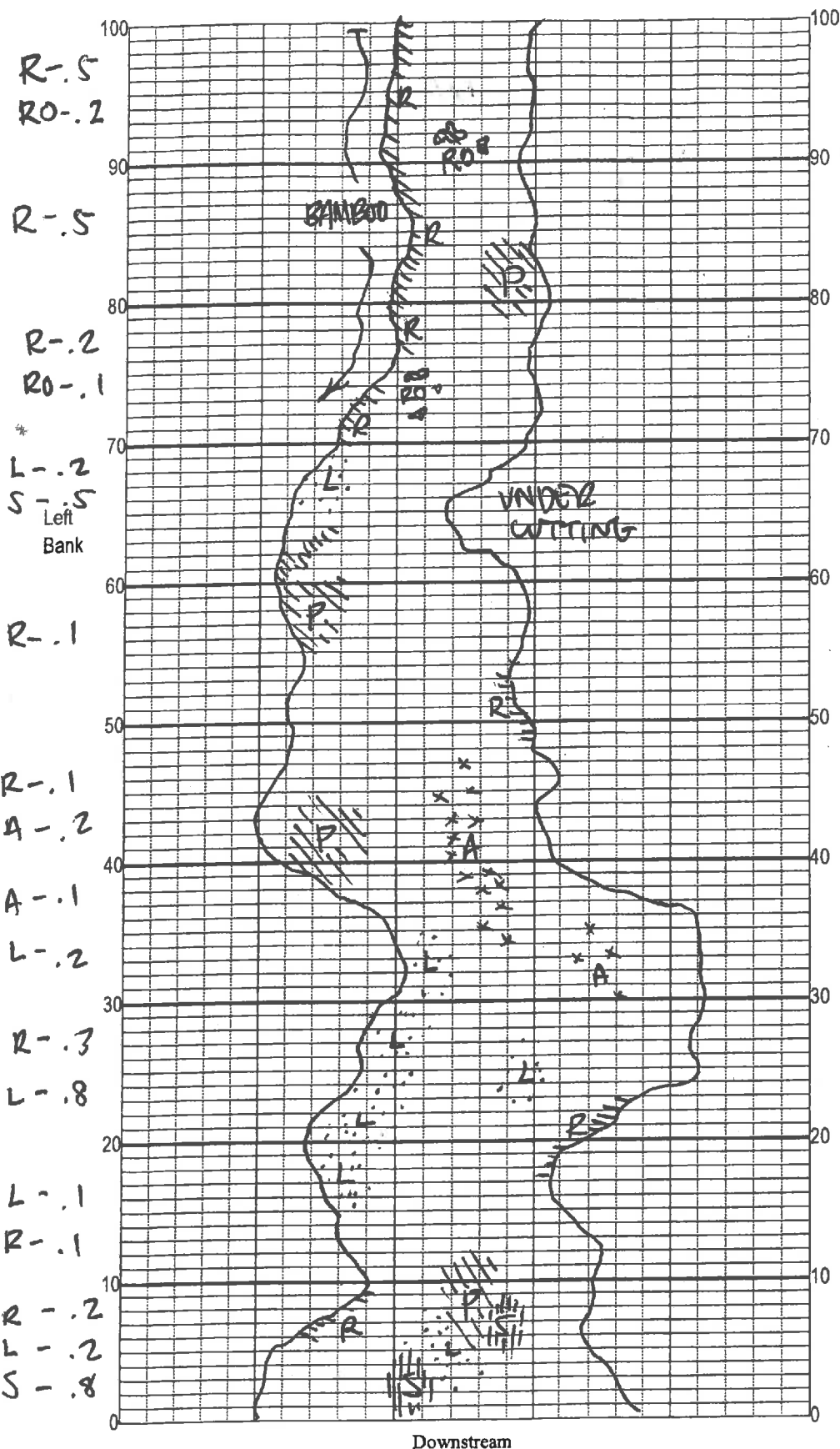
SAMPLING AGENCY: FDEP CEROC		STORET STATION NUMBER: G1CE0029	DATE (MM/DD/YY): 08/01/16	RECEIVING BODY OF WATER: Lk Harris
REMARKS:	COUNTY: LAKE	LOCATION: Holiday Spring	FIELD ID/NAME: G1CE0029	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 3	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 12	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 16 ----- Primary Score 35	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization 15	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank 7 Left Bank 6	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank 3 Left Bank 3 +	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank 3 Left Bank 3 + ----- Secondary Score 40	10 9	8 7 6	5 4	3 2 1

TOTAL SCORE

75

Date: 8/1/16	Analyst: Mike Linger Leif Roman	Signature: 
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Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: Holiday Springs
Date: Aug 1, 2010
Sampler: Leif Boman, Mike Linger

100 m: Latitude	<u>28.74062267</u>
Longitude	<u>-81.8176127</u>
0 m: Latitude	<u>28.741151</u>
Longitude	<u>-81.817444</u>
Substrates: Code key, draw proportionate habitat abundance. %	
<u>S</u>	Snags _____
<u>R</u>	Roots/undercut banks _____
<u>L</u>	Leaf Packs (or mats) _____
<u>A</u>	Aquatic Macrophytes _____
<u>RO</u>	<u>Roots</u> _____
<u>4</u>	Pools total # observed = <u>4</u> # range expected = <u>3-6</u>
Average width	<u>3</u> m
Average depth	<u>0.2</u> m
Velocity measured at <u>60</u> meter mark.	
WQ & chemistry taken at <u>100</u> meter mark.	
Habitat Smothering: Note areas (on map) where sand or silt is smothering substrates, limiting habitability.	
Bank Stability: Note areas (on map) with unstable, eroding banks.	
Riparian Buffer Width: Note areas (on map) where natural vegetation is altered or eliminated.	

Plants observed / other notes:

S - 1.3
R - 2.0
L - 1.5
A - .3
RO - .3

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Holiday Spring & above pump house County: Linke Date: 8/1/16 Investigators: Mike Linger

STORET Station Number: 67CE0029

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	3			60	1	N		
	2	3				2	N		
	3	3				3	N		
	4	3				4	N		
	5	3		84		5	N		72
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		
10	1	3			70	1	N		
	2	3				2	N		
	3	3				3	N		
	4	3				4	N		
	5	3		88		5	N		92
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		
20	1	3			80	1	N		
	2	3				2	N		
	3	3				3	N		
	4	3				4	N		
	5	3		84		5	N		88
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		
30	1	3			90	1	3		
	2	3				2	3		
	3	3				3	N		
	4	3				4	N		
	5	3		84		5	N		92
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		
40	1	3			100	1	N		
	2	3				2	N		
	3	3				3	N		
	4	3				4	N		
	5	3		88		5	N		92
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		
50	1	3				1	N		
	2	4				2	N		
	3	3				3	N		
	4	3				4	N		
	5	3		84		5	N		
	6	3				6	N		
	7	3				7	N		
	8	3				8	N		
	9	3				9	N		

Secchi depth 0.3 (5)
Estimated?

points ranked 4-6 5
total points assessed 99
% points ranked 4-6 5

Check accompanying data collected at same site/date:
Algal mat sample
Linear Veg Survey
Habitat Assessment ✓
SCI/Biorecon
Water sample ✓
RQ- 2016-08-01-34

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.
Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.
Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.
Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

G1CE0029

Waterbody: Holiday Springs above pump house

Date: 8/3/16

County: Marion

Storet Number: 2002 ¹

Analyst: Mike Linder

Signature: Am K e

Comments: No LVs performed < 2m² veg

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

[illegible]